CADARIU, I.; ANDREI, Z.; ONICIU, I.

Complexes of trivalent metals with organic hydroxy acids. Pt.II.
Studia Univ B-B S. Chem 7 no.1:71-75 '62.

[illegible], I.; [illegible], Z.

Complexes of trivalent metals with organ. hydroxy acids. Pt. 14.
Studia Univ B-B S. Chem 7 no.1:[illegible] '62.

SHIROKOV, Yu.G.; ANDREICHEV, V.N.; KIRILLOV, I.P.

Dielectric constant and dielectric losses of nickel oxide and nickel oxide-aluminum oxide. Izv. vys. ucheb. zav., khim i khim tekh. 7 no.5:774-781 '64 (MIRA 18:1)

1. Kafedra tekhnologii neorganicheskikh veshchestv Ivanovskogo khimiko-tekhnologicheskogo instituta.

ANdReIANiC.

Andreian, C. Le principe du maximum de Zorn dans la théorie des anneaux sans l'hypothèse des chaînes de diviseurs. Com. Acad. R. P. Române 1, 319–322 (1951). (Romanian. Russian and French summaries)

1 - F/W

The author applies Zorn's lemma to obtain the existence of ideals (multiplicative systems) maximal with respect to exclusion of a given set (ideal) in a ring [cf. pp. 104–5 of McCoy, "Rings and ideals", Open Court, La Salle, Ill., 1948; MR 10, 96]. As a first application the author then shows the existence of minimal and maximal prime ideals belonging to a given ideal in an arbitrary commutative ring; a result due to Krull [Math. Ann. 101, 729–744 (1929)], and proved here as in McCoy (loc. cit.). Secondly a few basic properties of the quasi-primary ideals defined by L. Fuchs [Acta Univ. Szeged. Sect. Sci. Math. 11, 174–183 (1947); MR 9, 77] are demonstrated for a commutative ring with no chain-condition.

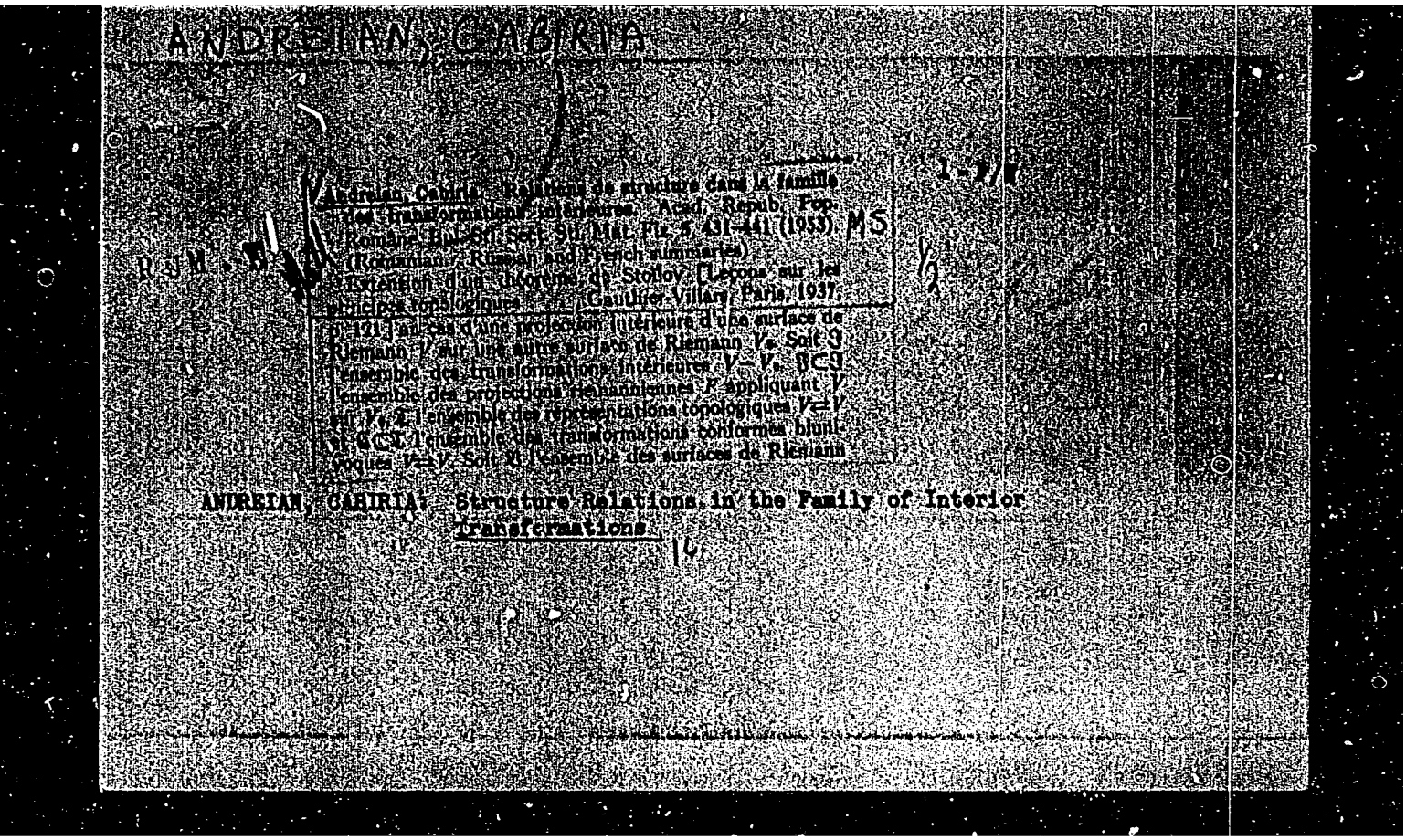
A. Rosenberg (Princeton, N. J.).

ANDREIAN, Cabiria

Andreian, Cabiria. Le théorème des disques pour les surfaces de Riemann normalement exhaustibles. Acad. Repub. Pop. Române. Bul. Şti. Secţ. Şti. Mat. Fiz. 4, 263–272 (1952). (Romanian. Russian and French summaries)

On étudie les surfaces de Riemann normalement exhaustibles, ayant un ordre de connexion arbitraire et l'on établit les résultats suivants, sur le nombre h des domaines simplement connexes et disjoints, qui ne sont couverts par aucun feuillet simple de la surface: A. Pour une surface de Riemann normalement exhaustible, dont le genre est zero, $h \leqq 3$. B. Si le genre g (resp. l'ordre de connexion c) et le nombre n des feuillets sont finis, $h \leqq 4+4(g-1)/n$ (resp. $h \leqq 2+2(c-2)/n$). C. Si le genre $g \geqq 1$ (resp. l'ordre de connexion c) est fini, mais la surface a une infinité de feuillets, $h \leqq 4$ (resp. $h \leqq 2$). D. Une condition nécessaire pour l'existence d'une infinité de domaines couverts par des feuillets multiples, est que le genre soit infini. Quelques exemples complètent l'exposé. (Author's summary.)

M. Heins (Providence, R. I.).



ANDREIAN, GABRIA

Andreian Cabria. Relations de structure dans la famille des transformations intérieures. Acad. Repub. Pop. Romîne. Bul. Sti. Sect. Sti. Mat. Fiz. 5, 431–441 (1953). MS

(Romanian; Russian and French summaries)

Extension d'un théorème de Stoïlov. Leçons sur les principes topologiques. Gauthier-Villars, Paris, 1937.

Soit V un cas d'une projection intérieure d'une surface de Riemann V_0. Soit $\mathfrak{I}$ l'ensemble des transformations intérieures $V - V_0$, $\mathfrak{R} \subset \mathfrak{I}$ l'ensemble des projections riemanniennes R appliquant V sur V_0, $\mathfrak{T}$ l'ensemble des représentations topologiques $V \rightleftarrows V_0$, $\mathfrak{C} \subset \mathfrak{T}$ l'ensemble des transformations conformes biunivoques $V \rightleftarrows V_0$. Soit $\mathfrak{A}$ l'ensemble des surfaces de Riemann

ANDREIAN, CABRIA: Structure Relations in the Family of Interior Transformations.

[illegible]

V_1 homéomorphes à V et t_1 une transformation topologique qui applique V_1 sur V. On définit d'une manière analogue [illegible].

Posant alors [illegible], le théorème de Stoïlov s'écrit

$$\mathfrak{I} = \bigcup \mathfrak{I}_{r}^{\ r} \quad \mathfrak{I}_{r}^{\ r} \cap \mathfrak{I}_{r}^{\ s} = 0 \quad (s \neq r).$$

Considérant alors les classes $\mathfrak{I}_r/\Sigma$ et d'autres du même type, l'auteur établit les correspondances biunivoques

[illegible] et [illegible]

qu'il généralise ensuite par l'application du théorème de Stoïlov; on obtient en particulier

[illegible]

L. Fourès (Marseille).

3/2

ANDREIAN CAZACU, C.

Iversen's theorem for Riemann surfaces normally exhaustible. p. 1145. COMUNICARILE. Bucuresti. Vol. 5, no. 8, Aug. 1955.

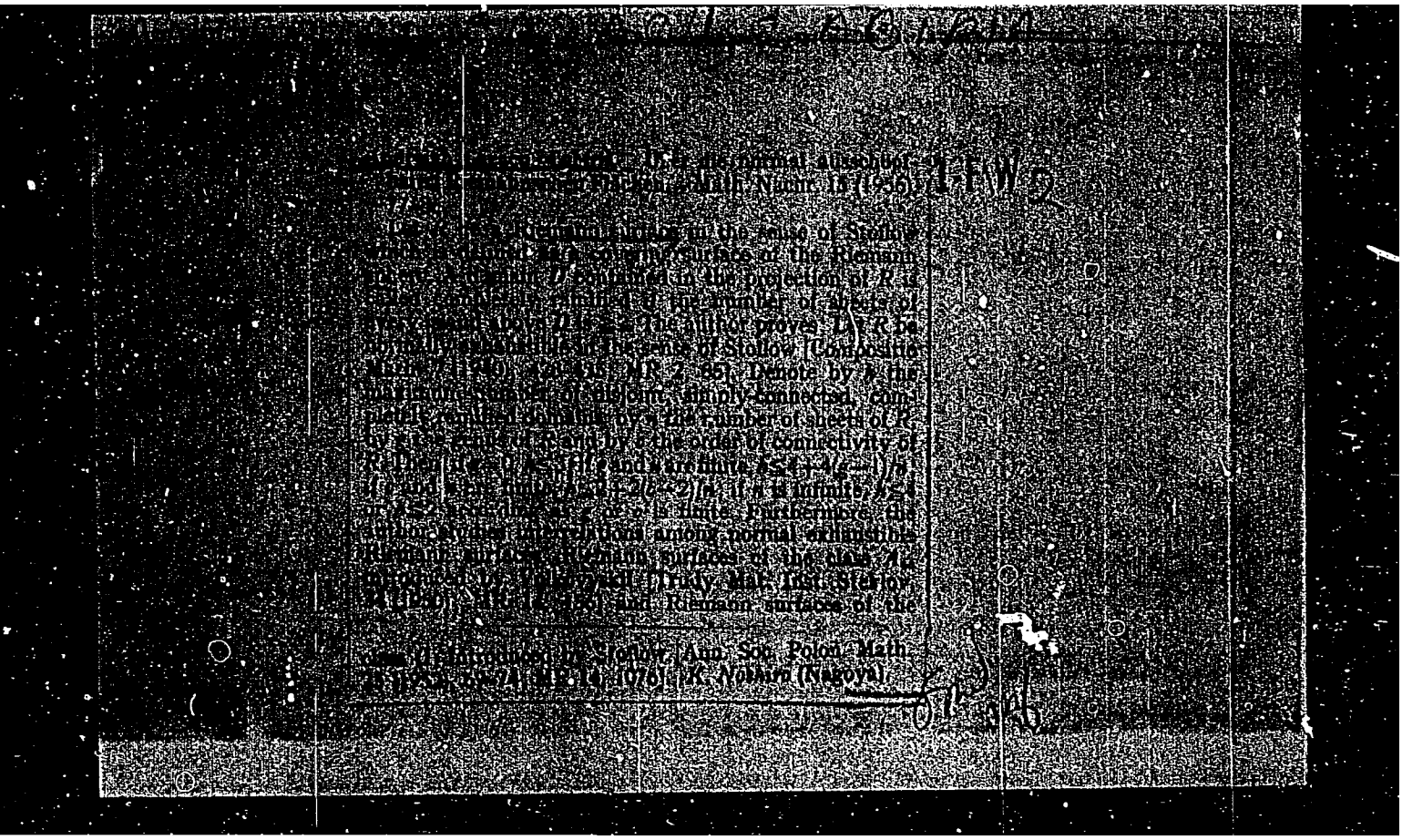
SOURCE: East European Accessions List (EEAL) Library of Congress Vol. 5, No. 7, July 1956.

Andreian Cazacu, Cabiria

1-F/W

Andreian Cazacu, Cabiria. Rapports entre les surfaces [illegible] normalement exhaustibles et les surfaces [illegible] qui se rapprochent de O_{Λ}. Acad. R. P. Romîne, Bul. Şti. Sect. Şti. Mat. Fiz. 7 (1955), 629–642. (Romanian. Russian and French summaries)

This paper studies the relation between Riemann surfaces normally exhaustible in the sense of Stoïlow (Compositio Math. 7 (1940), 428–435; MR 2, 85) and Riemann surfaces of class A_{ω} in the sense of Volkovyskii (Trudy Mat. Inst. Steklov. 34 (1950); MR 14, 156). It is shown that (1) normally exhaustible Riemann surfaces of the first kind having an infinity of ramification points belong to the class A_{ω}; (2) the surfaces of class A_{ω} are normally exhaustible or not according as the lacunary set reduces to a point or is empty; (3) the surfaces of class A_{ω} are regularly exhaustible. *M. Heins* (Providence, R.I.)



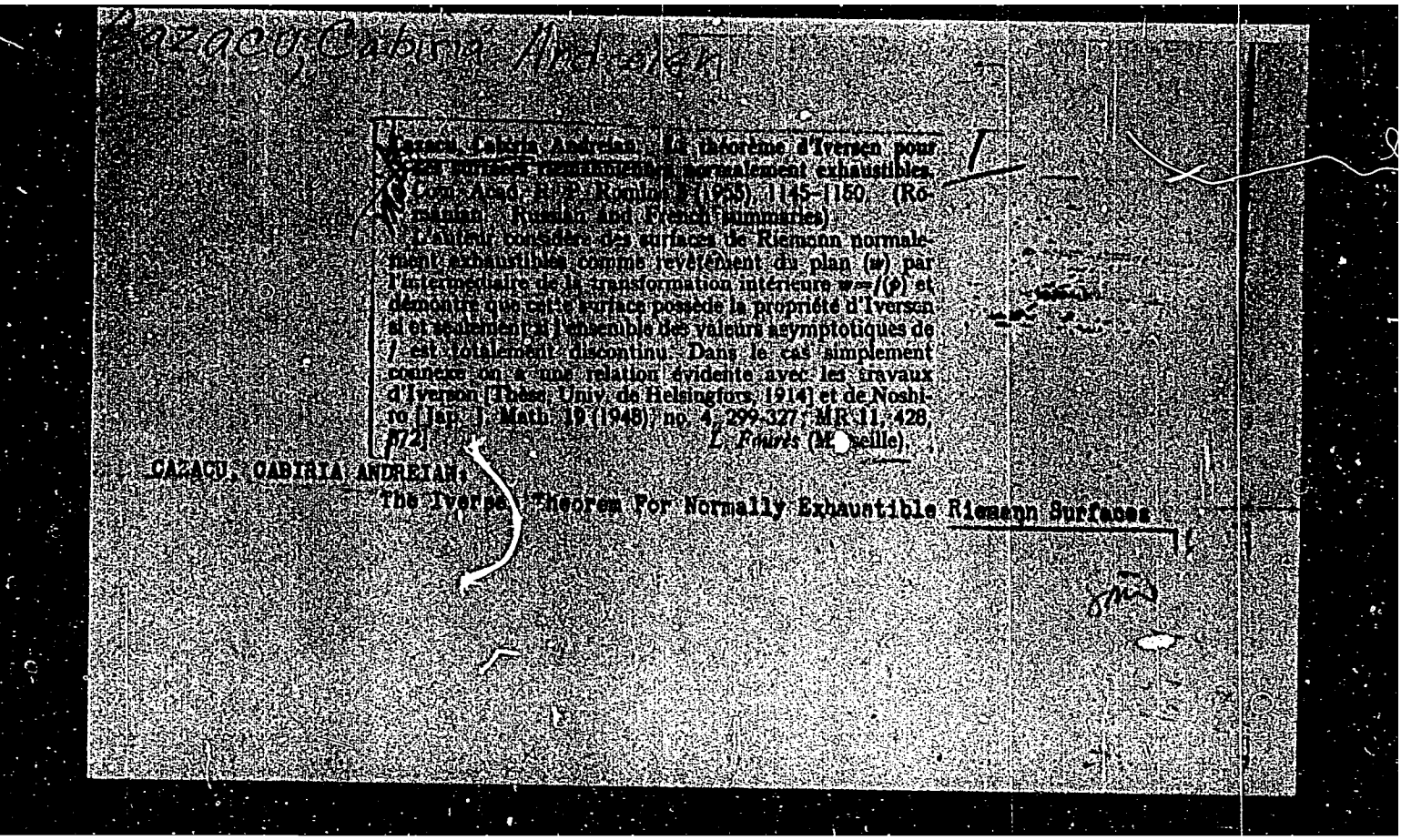
ANDREIAN CAZACU, Cabiria

On a formula of S. Stoilow. Rev math pures 5 no.1:59-74 '60.
(EEAI 10:9)

(Riemann surfaces) (Topology)

ANDREIAN-CAZACU, Cabiria, conf. univ. (Bucuresti)

From the life and work of Sofiya Vasil'yevna Kovalevskaya. Gaz mat fiz 14 no.2:101-105 F '62



Cazacu, Cabiria Andreian. Le théorème d'Iversen pour les surfaces de Riemann normalement exhaustibles. Com. Acad. R. P. Romîne 5 (1955), 1145–1150. (Rumanian, Russian and French summaries)

L'auteur considère des surfaces de Riemann normalement exhaustibles comme revêtement du plan (w) par l'intermédiaire de la transformation intérieure $w=f(\varphi)$ et démontre que cette surface possède la propriété d'Iversen si et seulement si l'ensemble des valeurs asymptotiques de f est totalement discontinu. Dans le cas simplement connexe on a une relation évidente avec les travaux d'Iversen [Thesis, Univ. de Helsingfors, 1914] et de Noshiro [Jap. J. Math. 19 (1948), no. 4, 299–327; MR 11, 428, f72]. L. Favard (Marseille)

CAZACU, CABIRIA ANDREIAN:
The Iversen Theorem For Normally Exhaustible Riemann Surfaces

S/044/63/000/002/010/050
A060/A126

AUTHOR: Andreian, Cazacu, Cabiria

TITLE: On the problem of type

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1963, 25 - 26, abstract 2B110 (An. Univ. C. I. Pathon. Ser. ştiint natur., 1959, no. 22, 23 - 37; Rumanian; summaries in Russian, French)

TEXT: M.A. Lavrent'yev's result is known: the quasiconformal mapping of the finite plane $z = r \exp(i\theta)$ with characteristic $p(z)$ retains the parabolic type, provided the integral

$$\int^{\infty} \frac{dr}{rp(r)}$$

diverges, where $p(r) = \max_{|z|=r} p(z)$. The author, generalizing a result of R.J. Wille (Indagationes Math., 1947, v. 9, no. 4, 415 - 419), proves that for certain special classes of quasiconformal mappings this integral criterion can be im-

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On the problem of type

proved. Let $\{c_\lambda\}$ be the family of level lines of a continuously differentiable function $\lambda = \lambda(x, y)$, $\lambda \in (\lambda_0, \infty)$ (if $\lambda' < \lambda''$, then $c_{\lambda'}$ lies within $c_{\lambda''}$ and as $\lambda \to \infty$, c_λ contracts to the point $z = \infty$), filling the domain $\delta \subset (|z| < \infty)$, $z = x + iy$. Orthogonal to $\{c_\lambda\}$ is the family $\{\gamma_t\}$ of level lines of the continuously differentiable function $t = t(x, y)$, $t \in [a, b]$, $\gamma_a = \gamma_b$, where λ and t form a system of curvilinear coordinates in δ. With respect to $\{c_\lambda\}$ and $\{\gamma_t\}$ it is assumed that

$$\frac{|\text{grad } \lambda|}{|\text{grad } t|} = F(\lambda) \cdot G(t),$$

where $F(\lambda) \geq 0$ and $G(t) \geq 0$. Let $\{C_\Lambda\}$ and $\{\Gamma_T\}$ be analogous families in the Z plane covering the domain Δ. One constructs a quasiconformal mapping δ on Δ in the form $\Lambda = g(\lambda)$ and $T = h(\lambda, t)$ with one pair of characteristics $p(z) = p(\lambda)$ and $\alpha(z) = \alpha(\lambda)$ for $z \in C_\lambda$, where $\alpha(z)$ is the angle between the tangent to C_λ and the major semiaxis of an infinitesimally small ellipse centered at the point z. Such a mapping $Z = f(z)$ exists when certain conditions are fulfilled. In order that $Z = f(z)$ retain the parabolic type it is necessary and sufficient that the integral

S/044/63/000/002/010/050
A060/A126

On the problem of type

$$\int^{\infty} \frac{p(\lambda)}{\cos^2 \alpha(\lambda) + p^2(\lambda) \sin^2 \alpha(\lambda)} \frac{d\lambda}{F(\lambda)},$$

diverge. The applications of this result to the problem of a Riemann type surface are indicated.

D.B. Potyagaylo

[Abstracter's note: Complete translation]

Card 3/3

ANDREIAN CAZACU, Cabiria

Superposition characteristics of Riemann surfaces. Rev math pures 6 no.4:685-701 '61.

ANDREIAN CAZACU, Cabiria

"Lectures on the theory of functions of a complex variable" by Giovanni Sansone and Johan Gerretsen. Vol.1. Reviewed by Cabiria Andreian Cazacu. Rev math pures 7 no.3:543-544 '62.

ARESTEANU, L., dr.; NICOLAU, Silvia, chim.; RUBINGHER, Lidia, chim.; ANDREIAS, Cornelia, stud.; DULCEANU, Iosefina, asist. med.

Apropos of coexisting pancreatic disease in patients with chronic hepatitis and post-hepatitis liver cirrhosis. Value of the combined pancreozymin and secretin test. Med. intern. (Bucur.) 17 no.9:1111-1118 S '65.

1. Lucrare efectuata in Clinica medicala de semiologie, Spitalul "Dr. Carol Davila", Institutul medico-farmaceutic, Bucuresti (director: conf. S. Ciorpaciu).

BARBER, Celia; EUSTATZIOU, Silvia; ANDREICA, Angela, collaborateur technique

A contribution to the study of the biology of Klebsiella. III. Chemical and immunological study of polysaccharides isolated from 2 capsulated strains and their noncapsulated mutants. Arch. Roum. path. exp. microbiol. 20 no.1:103-113 Mr '61.

1. Travail de l'Institut "Dr. I. Cantacuzino" - Service de Biochimie Generale.

(KLEBSIELLA chem) (POLYSACCHARIDES chem)

ANDREICA Gh

COUNTRY : Rumania K

CATEGORY : Forestry. Forest Cultures

ABS. JOUR. : RZhBiol., No. 2, 1959, No. C1-2

AUTHOR : Carlatachi, A.; Gotca, I.; Rubtov, St.; Spirchez, Z.; Hindju, G.; Strimbei, M.; Andreica, Gh., Paun, Vasile.

INST. :

TITLE : Methods for the Cultivation of Elms in Nurseries.

ORIG. PUB. : Rev. padurilor, 1957, 71, No.12, 772-776

ABSTRACT : In nurseries of [illegible] experiments were conducted with the littleleaf elm and the [illegible] elm to demonstrate in nurseries productivity depending on the denseness of the seedling stand in the steppe zone. It was established that seedlings of the [illegible] elm could exist perfectly on a permanent cultural tract after a period of a year. The optimal denseness of 1 - 2-year old

CARD: 1/2

49

ABSTRACT : seedlings was conducted on nursery surfaces. There was no preference as to the productivity of strips of two - and three-line sowings. Seedlings of the littleleaf elm in a year with normal precipitation in the steppe environment did not acquire standard dimensions for 1 year; fertilization with peat and P_0 had no effect. -- A. Yana

CARD: 2/2

IACOBESCU, D.; ANDREICA, V.

Open way for plastic materials in constructions. Constr Buc 15 no.700:2 8 Je '63.

1. Inginer-sef al fabricii "Horia, si Crisan", Turda (for Iacobescu).

ANDREICHEV, A.I.

Change in the cardiac muscle of a rat during the action of cortisone and some additional factors. Kardiologiia 3 no.5:33-40 S-O '63. (MIRA 17:9)

1. Iz Instituta terapii (direktor - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov, nauchnyye rukovoditeli - prof. K.K. Zamyslova i dr. med. nauk A.M. Vikhert.) AMN SSSR.

ANDREYEV, A.I.

Changes in the electrocardiogram, the content of potassium and sodium in the myocardium and the arterial pressure in rats following introduction of cortisone and the effect of some additional factors. Fiziol.zhur. 51 no.7:838-843 '65.
(MIRA 18:10)

1. Institut terapii AMN SSSR, Moskva.

5(1), 2(1) SOV/64-59-5-14/28

AUTHOR: Andreichev, A. N.

TITLE: On the Use of Explosives in the Potash Industry

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 5, pp 418-419 (USSR)

ABSTRACT: Unsafe explosives are applied to potash mines in USSR (except for the mining of carnallite). The necessity of using safe explosives for potash mining is discussed (in analogy to explosives used for coal mining). It is pointed out that clouds of dust occurring in explosions in potash mines immediately extinguish the arising flame with their inert property, so that also under formation of explosive gases an inflammation would be located. In Eastern Germany, unsafe explosives, partly containing also nitrocompounds (Table 2, properties of these explosives), were also applied to potash mines (Table 1). The explosive effect of donarites and gelatin-donarites is about 1.5 times larger than that of the safe explosives, that are produced in USSR (Ref 2) and equals the effect of ammonites Nr 6 and Nr 7. The addition of inert materials to explosives (for their safety) extremely diminishes the explosive effect and causes the reduction of the mining results, especially in

Card 1/2

tough stone like sylvite and rock salt. The high explosive power of the dynamites is of main importance in the mining of carnallite. The use of safe explosives may cause a necessary diminution of the explosive effect, a process, that may also be obtained by reduction of the loading (with unsafe explosives). Considerations admit the statement that the application of safe explosives to potash salt mines is improper. Explosives, manufactured in USSR under the trade name rock ammonites, are of special interest, because their explosive effect and their high explosive power are considerably larger than those of ammonium nitrate explosive (Table 3, data of the first-mentioned explosives with type designations). There are 3 tables and 2 references, 1 of which is Soviet.

ANDREICHEV, A.N.

Current problems in the further mechanization of the mining of potassium ores. Khim.prom. no.7:608-612 O-N '59. (MIRA 13:5)
(Potassium) (Mining engineering--Equipment and supplies)

ANDREICHEV, Anatoliy Nikolayevich; NUDEL'MAN, Abram Borisovich; DUKHOVLIN, D.P., inzh., retsenzent; PICHOV, N.I., inzh., retsenzent; VEKSER, A.A., red.; SHPAK, Ye.G., tekhn.red.

[Mining and processing of potassium salts] Dobycha i pererabotka kaliinykh solei. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1960. 450 p. (MIRA 13:12)
(Potassium salts)

ANDREICHEV, A.N., kand.tekhn.nauk

Feasibility of open-pit mining of potassium deposits.
Gor.zhur. no.7:14-17 Jl '60. (MIRA 13:7)

1. Gosudarstvennyy institut gorno-khimicheskogo syr'ya
Lyubertsy, Moskovskoy oblasti.
(Strip mining) (Potash)

ANDREICHEV, A.N., kand.tekhn.nauk

Efficient utilization of the Starobin potassium deposit. Khim. prom. no.6:405-409 Je '61. (MIRA 14:6)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut gornokhimicheskogo syr'ya.
(Starobin—Potassium)

ANDREICHUK, A.K.

Anchor strengthening of roofs in potassium mining shafts. Mekh. prom. no.7:506-508 Jl '61. (MIRA 14:7)
(Potash industry--Equipment and supplies)

ANDREICHEV, A.N., kand.tekhn.nauk

Some problems in stripping potassium deposits. Shakht. stroi. 5 no. 1:7-10 Ja '61. (MIRA 14:2)

1. Gosudarstvennyy institut gornokhimicheskogo syr'ya.
(Potash)

SIDOROV, I.P., kand.tekhn.nauk; ANDREICHEV, P.P.

Simplified method for measuring temperatures in the catalyst case with countercurrent tubes insulated at different lengths. Trudy GIAP no.7:224-230 '57. (MIRA 12:9)
(Catalysis) (Temperature--Measurement)

SIDOROV, I.P.; KAZARNOVSKAYA, D.B.; ANDREICHEV, P.P.

Recirculation flow method for studying the kinetics of heterogeneous catalytic reactions at high pressures. Kin.i kat. 3 no.4:523-526 Jl-Ag '62. (MIRA 15:8)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut azotnoy promyshlennosti.

(Catalysis)

L 3215-65 EWT(1)/EPA(s)-2/EEC(t) Pt-10/Pi-4 IJP(c) GG

ACCESSION NR: AP5001753 S/0153/64/007/005/0774/0781

AUTHOR: Shirokov, Yu. G.; Andreichev, V. N.; Kirillov, I. P.

TITLE: Dielectric permeability and dielectric losses of NiO and NiO-Al_2O_3

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 5, 1964, 774-781

TOPIC TAGS: nickelous oxide, nickelous oxide alumina system, dielectric permeability, dielectric loss

ABSTRACT: The dielectric permeability ε and the tangent of the angle of dielectric loss tgδ of NiO and of coprecipitated NiO-Al_2O_3 systems containing up to 49% NiO were determined at frequencies from 50 kilocycles to 20 megacycles using a KV-1 Q-meter. The dielectric permeability depended on frequency and the temperature at which the oxide was obtained: ε_{NiO} decreased as frequency increased and decreased most rapidly as the temperature was increased from 350 to 700C. For samples having nearly stoichiometric composition, $\varepsilon_{NiO} \sim 10$ and was independent of frequency from 10^4-10^7 cycles/sec. With deviation from stoichiometry the number of holes in the ionic crystal increased and ε increased.

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L 32915-65
ACCESSION NR: AP5001763

The tgδ increased with frequency and decreased as the composition approached stoichiometric NiO; tgδ was minimal for samples prepared at 800C; anionic defects started to form at higher temperatures. In the $NiO-Al_2O_3$ system ε and tgδ were independent of frequency but changed sharply with increase in NiO, especially in the 18-30 mol% region; ε $NiO-Al_2O_3$ decreased from 3.5 to 1.2, while tgδ increased and then decreased with higher NiO content. Thus ε and tgδ are functions of deviations from stoichiometry in NiO, of the distribution of Ni^{2+} in the tetrahedral and octahedral positions and the number of vacancies in $Ni_xAl_{3-x-\square}\square_{\square}O_4$. Orig. art. has: 6 figures, 2 tables, and 5 equations.

ASSOCIATION: Kafedra tekhnologii neorganicheskikh veshchestv, Ivanovskiy khimiko-tekhnologicheskiy institut (Department of Inorganic Materials Technology, Ivanov Chemical Technological Institute)

SUBMITTED: 01Jul63 ENCL: 00 SUB CODE: EM, GC
NR REF SOV: 009 OTHER: 010

Card 2/2

PAL'VELEV, V.T.; ANDREICHEVA, L.A.

Method and technology of microchemical analysis of products of silicate leaching. Kora vyvetr. no.2:409-416 '56. (MLRA 9:8)
(Silicates) (Mineralogy, Determinative) (Leaching)

ORAHOVATS, D., acad.; GLAVCHEVA, [illegible]; ANDREICHEVA, M:

A study of certain laws governing the release of proteins into the gastric juice and the part played by the nervous system in this process. Rumanian M Rev. no.1:205-214 Ja-Mr '61.

1. The Institute of Experimental Medicine of the Academy of Sciences, Bulgaria.
(PROTEINS matabolism) (GASTRIC JUICE chemistry)
(NERVOUS SYSTEM physiology)

ANDREICHEVA, Nina Alekseyevna; SENKOV, Fedor Vasil'yevich; RYAZANTSEVA, L.I., red.; KASIMOV, D.Ya., tekhn. red.

[Protecting wood from rot; assistance for the rural builder] Zashchita drevesiny ot gnieniia; v pomoshch' sel'skomu stroiteliu. Moskva, Gosstroiizdat, 1963. 62 p. (MIRA 16:5)

(Wood--Preservation)

ANDREICHIN, R., prof. d-r

Application of semiconductors in biology and agrobiology.
Priroda Bulg 13 no.6:9-12 N-D '64.

ANDREICHEN, R.

BULG.

537.312.5

3487. Photovoltaic effect in polycrystalline sulphur under lateral irradiation. G. NADZHAKOV AND R. ANDREICHIN. *Izv. Bulg. Akad. Nauk*, 2, 293–320 (1951) *In Bulgarian.*

A new photovoltaic effect in sulphur is described, differing from the previously known effects by the fact that both electrodes were uniformly irradiated from one side only. The photo-p.d. resulting was measured by electrometer the readings of which were photographed. In lateral irradiation of photo-depolarized sulphur the electrometer, after disconnection, showed a deflection corresponding to a photo-p.d. which is a function of time. The photo-p.d. of each photoelement has a value depending on the electrode material. In the evaluation the maximum values (saturation values) of the photo-p.d. were used.

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On darkening, the formation of the p.d. stops, starts again and goes up to the maximum when irradiation continues, the potential reached is maintained in the darkness, apart from negligible leakage losses. The potential gradient with respect to time increases with optical intensity applied. There is a photo-potential series of electrode materials from negative to positive, thus: Al, Zn, Fe, Cu, Pt, Ni for which the photo-e.m.f.'s were established (for comb-type and wire-shaped electrodes), which for wire-shaped electrodes coincides with the voltaic series of contact potentials, comb-type electrodes causing some deviations from the voltaic series. Yet the photo-p.d.'s could still be proved to be intrinsically pure contact p.d.'s, so that sulphur which in darkness is an insulator and in the light a conductor simply serves as a solid electrolyte. It was possible to produce photo-elements which retained the photo-p.d. equal to the contact-p.d. in the darkness. The magnitude of this p.d. is independent of the optical wavelength used. The contact p.d. is thus the limiting value of the photo-p.d.'s obtainable; sulphur is activated as solid electrolyte by irradiation.

B. F. KRAUS

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ANDREICHEV, A.N., kand. tekhn. nauk

What kind of tubing is needed for the shafts of potash mines.
Shakht. stroi. 5 no.9:11-13 S '61. (MIRA 16:7)

1. Gosudarstvennyy institut gornokhimicheskogo syr'ya.
(Potash) (Mine timbering)

L 60931-65

ACCESSION NR: AR5017399 UR/0081/65/000/010/N095/N095

SOURCE: Ref. zh. Khimiya, Abs. 10N582

AUTHOR: Andreichev, A. N.; Kushnarev, D. M. 44,55

TITLE: On simple explosives 41,55

CITED SOURCE: Bezopasnost' truda v prom-sti, v. 6, no. 8, 1964, 4-6

TOPIC TAGS: explosive, igdanite, aquatol, granulite, zernogonulite, ammonite

TRANSLATION: A comparison is given of explosive properties, the amount of toxic gases in the products of an explosion, and the cost of blasting operations using simple explosives: igdanites, aquatol, granulite AS and zernogonulite 80/20, and ammonite No 6. The authors propose to allow the use of simple explosives at mining-chemical enterprises with the exception of mines which are dangerous because of gas and dust. V. Zhilin

SUB CODE: MA ENCL: 00

Card 1/1

Andreichin, R.

537.312.5

1840. PHOTOVOLTAIC EFFECT IN POLYCRYSTALLINE SULPHUR BY TRANSVERSE ILLUMINATION. G. Nadzhakov and R. Andreichin. [illegible] Vol. [illegible], No. [illegible] (April-June, [illegible]) In Russian.

The photovoltaic effect for sulphur between two electrodes of [illegible] is investigated. Uniform illumination between [illegible] gives an e.m.f. whose sign and magnitude [illegible] of light intensity and wavelength. It [illegible] the electrode metals used, and is equal to the [illegible]

G. F. J. Garlick

ANDREYCHIN, R.

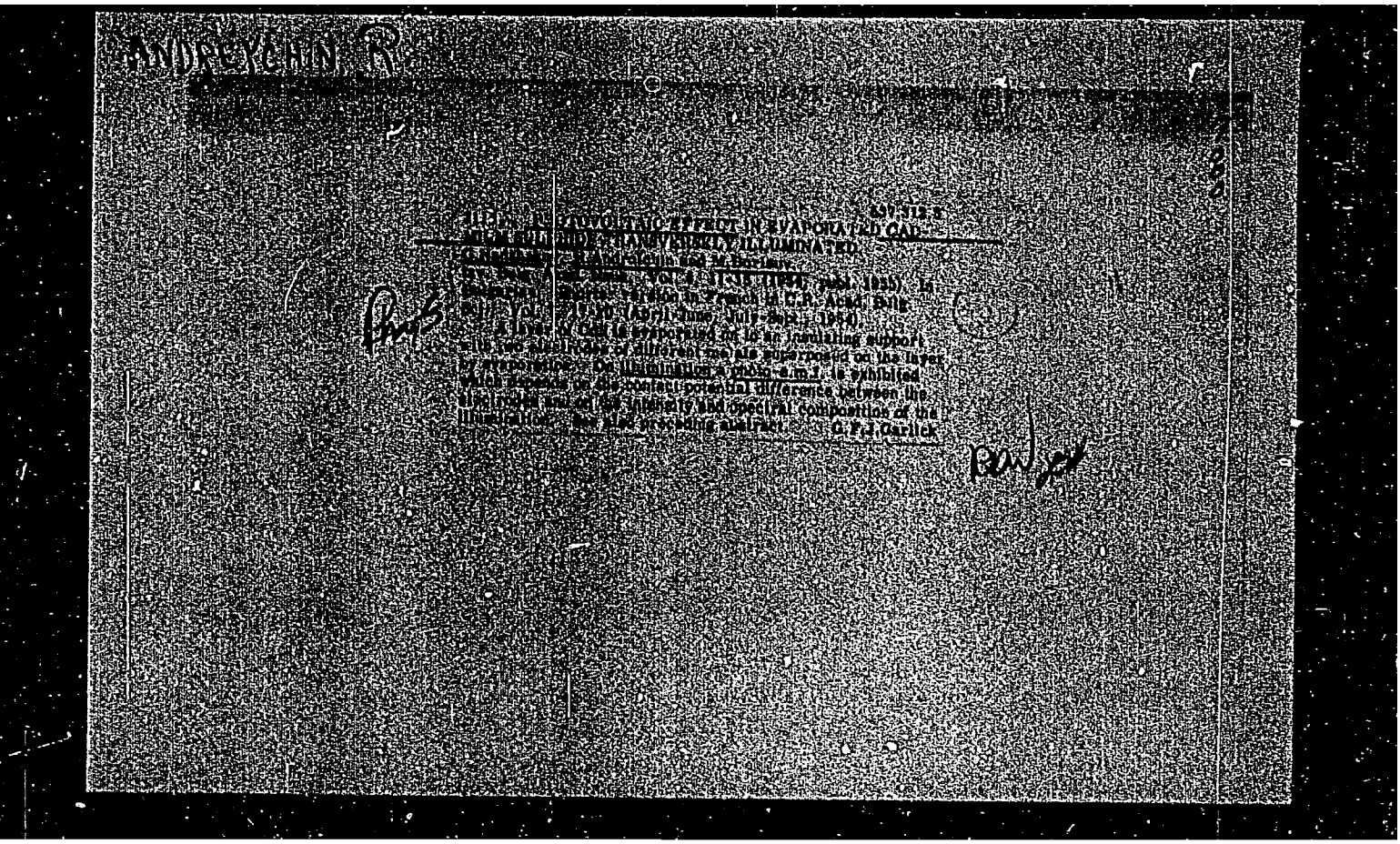
Photovoltaic effect of polycrystalline sulfur at transverse irradiation. O. Nadzhakov and R. Andreichin. *Compt. rend. acad. bulgare sci.* 5, No. 2/3, 9-12(1952)(French summary); cf. C.A. 48, 8000.—The potential difference of the photovoltaic effect in S under identical irradiation of both electrodes is the same as that of the electrodes in contact. Under irradiation S becomes an elec. conductor. The potential difference is the same for all light sources. The photovoltaic effect can be obtained in the dark by the introduction of a trace of conducting impurity between the electrodes. I. Bencowitz

537.312.5

[illegible] PHOTOVOLTAIC EFFECT IN CRYSTALLINE CADMIUM SULPHIDE. G. Nadjakov and R. Andreychin. [illegible] Bulg. Acad. Sci., Vol. 4, 1-10 (1954; publ. 1956). In Bulgarian. Shorter version in French in C.R. Acad. Bulg. Sci., Vol. 7, No. 2, 13-16 (April-June, July-Sept., 1954).

Preliminary studies of the effect are made using a crystal with electrodes selected from the metals Al, Zn, Fe, Cu and Pt. The e.m.f. (from 0.1 to 0.8 eV) produced by illumination always appears in the contact potential difference between the electrodes and on the intensity and spectral composition of the illumination. See also abstract following.

G.F.J.Garlick



BULGARIA/Electricity - Semiconductors G-3

Abs Jour : Ref Zhur - Fizika, No 12, 1958, No 27880

Author : Nadjakov G., Andrejtschin R., Balabanov St., Stanislavova J.
Inst : Physics Institute, Bulgarian Academy of Sciences, Sofia, Bulgaria.
Title : Comparative Investigations of the Longitudinal and Transverse Photovoltaic Effects in Samples of Cadmium Sulfide Obtained by Evaporation.

Orig Pub : Dokl. Bolg. AN., 1957, 10, No 4, 277-280

Abstract : The authors have investigated the principal characteristics of the photovoltaic effect in specimens of CdS, obtained by evaporation, with different (Al and Au) electrodes in the case of longitudinal and transverse illumination (relative to the electrodes). Data are given on the dependence of the photo emf and the photocurrent i on the intensity I. It is shown that in most cases the photovoltaic effect has the same features: i depends on I linearly, and the dependence of $\mathcal{E}$ on I is described by a curve that has saturation. No rectifying effect was observed. In all cases the photo emf is of the purely barrier type.

Card : 1/1

ANDREICHIN, R.; KAKHLIBAROV, T.

Standardizing the absolute units of photographically measured ultraviolet radiation. Khidro i meteorolog no.1:40-47 '60. (EEAI 10:1)

(Ultraviolet rays) (Photometry)

9,4179 (1114,1137)
26.1512

31427
B/502/60/008/000/001/003
D260/D304

AUTHOR: Nadzhakov, G., and Andreychin, R.

TITLE: Contact-potential photovoltaic effect

SOURCE: Bulgarska akademiya na naukite. Fizicheski institut. Izvestiya na fizicheskiya institut s ANEB, v. 8, 1960, 5-15

TEXT: The authors discovered and studied a phenomenon which consists of the appearance of an electromotive force and flow of current when the setting in motion of the charge carriers released by the light is due to the contact potential difference between the electrodes. This phenomenon is called contact potential - photovoltaic effect (CPPE). The goal of the article is to summarize the main characteristics of the effect and to establish its place among the other known photovoltaic effects. This effect is demonstrated in its purest form in semi-conductors which have two ohmic contacts of different metals deposited on them, and when illumination is transversal and absolutely uniform along the entire layer, it is

Card 1/5

Contact-potential photovoltaic ...

said that the effect can exist simultaneously with the remaining types of photovoltaic phenomena, as well as independently. No photovoltaic effect is to be observed with electrodes of one and the same metal whereas with electrodes of two different metals, the polarity of the photoelectromotive force follows exactly the sign of the contact potential difference between the electrodes. It has been demonstrated for photoelements of sulphur that the photoelectromotive force is exactly equal in sign and value to the contact potential difference between the electrodes, and that it depends neither on the intensity nor on the spectral composition of the light. In the case of semi-conductors, the sign of the electromotive force also follows the polarity of the contact potential difference between the electrodes; its value depends on the intensity of the light, showing a tendency to approximate a saturated value equal or close to the contact potential difference between the electrodes. The dependence of the current on the intensity of light is in most cases close to linear. Photoelements of evaporated films of CdS, PbSm Ag_2S and of crystals of CdS, NaCl and PbS were inve-

Contact-potential photovoltaic ...

stigated. In the case of thin layers of CdS the effect does not depend on the direction or manner of illumination. Tests on transversal and longitudinal illumination are illustrated graphically. Detailed investigations on the contacts between the metal and the semi-conductor indicate that three types of photoelements are obtained, although the technology is not yet standardized sufficiently: (1) With both ohmic contacts, (2) with variator contacts, and (3) with rectifying contacts. All three types of photoelements prove that the CPPE is independent of the type of contacts. The independence of the CPPE from the structural one has been demonstrated in the case of PbS and the photoelements obtained show only the first one. In semi-conductors of purely ionic or mixed conductivity it was established that in cases of different electrodes the CPPE is added to the galvanic current existing in the dark. A working hypothesis has been set up for a qualitative explanation of the phenomenon. The authors assume that the electromotive force is due to the existing contact-potential difference between the electrodes, its manifestation and flow of current occurring when the light releases suitable charge carriers in the interior of the semi-con-

Card 3/5

Contact-potential photovoltaic ...

ductors, in a manner analogous to the ions obtained in the galvanic elements through electrolytic dissolution. In order to differentiate more precisely between the CPPE and the remaining simple photovoltaic effects, Tauc's classification (Ref. 21: Rev. of Modern Physics, v. 29, 1957, 308-324) was revised and a new variant suggested, namely the five simple photovoltaic effects should be situated along a circle. By strictly observing their division into barrier and non-barrier ones, contact and non-contact, the gradual transition upon a closed circle becomes apparent. In this particular instance, the CPPE effect which holds a place between the Dember effect and the photoeffect in barrier layer, bears a certain similarity to the Dember effect, in that they are both non-barrier ones, but it is not homogeneous and the electrodes play no part in the Dember effect; the CPPE depends in the first place on the electrodes and in its pure form does not depend on the nonhomogeneity of the illumination. The difference between the CPPE and the one in barrier layers is that the former is non-barrier while the latter is barrier. However, they are similar in that in the first case the charge carriers are set in motion by the contact potential of the

Card 4/5

Contact-potential photovoltaic ...

electrodes, in the second case this is done by the potential difference at the contact between metal - semi-conductor. There are 6 figures and 31 references: 23 Soviet-bloc and 8 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: Y. T. Sihvonen and D. R. Boyd: Ohmic probe contacts to CdS crystals, J. Appl. Phys., 29, (1958), 1143-1145; R.W. Smith, Properties of ohmic contacts to cadmium sulfide single crystals, Phys. Rev., 97, (1955), 1525-1530; Jan Tauc: Generation of an emf in semiconductors with non-equilibrium current carrier concentration. Rev. of Modern Physics, v. 29, 1957, p. 308-324; J.B. Kramer, Electrician, 93, 1924, 497.

SUBMITTED: October 10, 1959

Card 5/5

9,4179(1114,1137)
26.1512

31428
B/502/60/008/000/002/003
D260/D304

AUTHORS: Andreychin, R., and Fileva, N.

TITLE: Transversal photovoltaic effect in evaporated layers of silver sulphide

SOURCE: Bulgarska akademiya na naukite. Fizicheski institut. Izvestiya na fizicheskiya institut s ANEB, v. 8, 1960, 19-32

TEXT: The aim of the present exploratory work was to establish the universality of the transversal contact potential effect. Silver sulphide is a semiconductor with interesting photoelectric properties such as n-electron conductivity, presence of a barrier layer only several angstroms thick, anomalous direction of the rectified current, and ionic conductivity. The presence of a contact potential photovoltaic effect was observed in silver-sulphide elements which were obtained by the vacuum deposition of sulphur on a plate of silver. Two electrodes of different metals were deposited, one against another in the form of combs. The electromotive force ap-

Card 1/4

Transversal photovoltaic effect ...

pears as a result of the effect of light when the two electrodes are of different metals and a contact potential difference between them is established. Throughout all the experiments with photoelements the illumination was transversal, and uniform for the entire layer of the semiconductor. Polarity of the photoelectromotive force always followed the sign of the contact potential difference between the electrodes, when gold was the positive and aluminum the negative electrode. The majority of the photoelements showed an electromotive force of 5 to 300 millivolts in the dark and a current of 0.002 to 0.2 microamperes. The electromotive force increased by 20 to 30% in the light (values between 8 and 430 millivolts were observed) and the current then usually increased by a factor of two. The photovoltaic effect seems to possess considerable inertia. With some photoelements, when illuminated, there was a slow increase in the intensity of the current, while with others, there was first a decrease followed by an increase in the intensity of the current. When external tension was applied, the volt-ampere characteristics show ohmic contacts more seldom, and in most

Transversal photovoltaic effect ...

cases the contacts are non-linear of the varistor type and are nearly always symmetrical or almost symmetrical. Instances of a non-typical rectifying effect with predominance in one direction are rare. Polarity of the photovoltaic effect was always the same, as determined by the contact potential difference between the electrodes, irrespective of the type of contacts and of the degree and direction of the rectifying effect. It was established that the observed photovoltaic effect is a contact-potential one and is independent of the type of contacts. The presence of the electromotive force and current in the dark is explained by the existence, to a greater or lesser extent, of ionic conductivity in the silver sulphide. Research in this connection is still continuing. The original paper also contains an explanation of certain anomalies observed in individual photoelements. G. Nadzhakov and R. Andreychin (Ref. 8: Izvestiya na BAN, seriya fizicheska, 2, no. 2, 1952, 1 - 4) are mentioned for their contribution in this field. There are 7 figures and 14 references: 12 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as

31428
B/502/60/008/000/002/003
D260/D304

Transversal photovoltaic effect ...

follows: J. Tauc, Rev. Mod. Physics 29, 308-324 (1957); M. H. Hebb, Journ. Chem. Phys., 20, 185, (1952).

SUBMITTED: November 14, 1959

Card 4/4

S/058/61/000/012/032/083
A058/A101

AUTHORS: Andreychin, R., Kekhlibarov, T.

TITLE: Small portable quartz spectrograph for measuring solar ultraviolet radiation

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1961, 243, abstract 12G135 ("Izv. fiz. in-t s ANYeB", 1960, no. 8, 267-274, Bulg., Russ. and Germ. summaries)

TEXT: There is described a spectrograph using a self-collimating Ferri prism for comparative spectral intensity measurements of the Sun's ultraviolet radiation.

[Abstracter's note: Complete translation]

Card 1/1

ANDRE[illegible]CHIN, R., Dr.

Conference on the physics of semiconductors. Spisanie BAN 6 no.1: 91-94 '61. (EEAI 10:9/10)

(Semiconductors)

24.2600

S/181/62/004/003/040/045
B101/B102

AUTHORS: Andreychin, R., and Kolomiyets, B. T.

TITLE: The photo-electromotive force in arsenic chalcogenides

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 814 - 815

TEXT: The dependence of photo-emf of the systems As_2S_3-As_2Se_3 and As_2Se_3-As_2Te_3 on their composition was examined. For this purpose a series of melts were studied in which sulphur was replaced by selenium and tellurium in increasing percentage: As_2S_3; $3As_2S_3 \cdot As_2Se_3$; $As_2S_3 \cdot As_2Se_3$; $As_2S_3 \cdot 3As_2Se_3$; As_2Se_3; $3As_2Se_3 \cdot As_2Te_3$; $As_2Se_3 \cdot As_2Te_3$; $As_2Se_3 \cdot 3As_2Te_3$; As_2Te_3. Al and Au electrodes (gap 0.5 mm) were condensed on the specimens in vacuo, the specimens were illuminated with 10,000 lux and the photo-effect was measured. Results: (1) the Al electrodes were always negative, the Au electrodes positive; (2) no photo-emf arose between electrodes of the same metal; (3) the increasing substitution of S by Se and Te was

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attended by a reduction in the photo-emf. The cause of the observed photo-emf is assumed to be either (a) a difference in the contact potentials, or (b) the presence of a barrier layer at the metal-semiconductor interface. The wide dispersion of the measured values despite the intensity of the illumination lends support to alternative (a) since the contact potential is strongly influenced by the surface of the specimen, mode of applying the electrode, etc. This work was carried out jointly with the Institute of Physics of the Bulgarian As. There is 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe of the AS USSR, Leningrad)

SUBMITTED: December 30, 1961

ANDREICHIN, R., d-r; MIKHAILOV, M.; NIKIFOROVA, M.

Independence of the contact-potential from the structural voltaic effect in thin layers of lead sulfide. Izv fiz atom BAN 9 no.2:5-16 '62.

1. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

NADZHAKOV, G., akad.; ANDREICHIN, R., d-r; BALABANOV, St.; STANISLAVOVA, Iu.

Presence of a locking layer in the transversal photovoltaic effect in evaporated cadmium sulfide. Izv fiz atom BAN 9 no.2:17-23 '62.

1. Chlen na Redaktsionnata kolegiia i otgovoren redaktor, "Izvestiia na Fizicheskiia institut s ANEB" (for Nadzhakov). 2. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

NADZHAKOV, G., akad.; ANDREICHIN, R., d-r; STANISLAVOVA, IU.

Preliminary studies on the spectral distribution of the transversal photovoltaic effect in evaporated layers of cadmium sulfide. Izv fiz atom BAN 9 no.2:25-29 '62.

1. Chlen na Redaktsionnata kolegiia i otgovoren redaktor, "Izvestiia na Fizicheskiia institut s ANEB" (for Nadzhakov).
2. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

ANDREICHIN, R., d-r; KEKHLIBAROV, T.

Comparative spectral measurements of the ultraviolet solar radiation. Pt. 1. 1960. Izv fiz atom BAN 9 no.2:191-200 '62.

1. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

ANDREICHIN, R., d-r; IVANOV, A., KEKHLIBAROV, T.

A device for the standard development in the photographic photometry. Izv fiz atom BAN 10 no.2:81-86 '62.

1. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANSB."

ANDREICHIN, R.; IVANOVA, H. [Ivanova, Kh.]

Positive and negative photovoltaic effect in silver sulfide layers. Doklady BAN 15 no.3:245-248 '62.

ANDREICHIN, R.

On various kinds of photoelectromotive forces in lead sulfide layers. Doklady BAN 15 no.8:809-812 '62.

1. Submitted by Academician G. Nadjakov [Nadzhakov, G.].

ANDREICHIN, R. ; IVANOVA, M. [Ivanova, Mh.]

On photoelectromotive forces in crystal violet. Doklady BAN 15 no.8: 813-816 '62.

1. Submitted by Academician G. Nadjakov [Nadzhkov, G.].

Concerning the methods of determination of certain areas of electrical and photoelectric properties of semiconductors by means of measurement of contact potential differences. K. S. Balabanov (20 minutes).

Photovoltaic effects in CdS_xSe_{1-x}. R. Andreychin, A. Ivanov, M. Nikiforov, Yu. Stanislavova (20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

ANDREICHIN

L 18844-63 EWP(q)/BDS AFFTC/ASD RDW/JD/JG

ACCESSION NR: AP3005932 S/0030/63/003/008/K280/K283

AUTHOR: Andrejtschin, R., Nikiforova, M., Ivanov, A., Stanislavova, J.

TITLE: Transverse photovoltaic effect in the CdS sub x Se sub (1-x) monocrystalline system (short note)

SOURCE: Physica status solidi, v. 3, no. 8, 1963, K280-K283

TOPIC TAGS: semiconductor, cadmium sulfide, cadmium selenide, cadmium sulfide-selenide, photovoltaic effect, photoresistance, mixed semiconductor

ABSTRACT: $CdS_xSe_{(1-x)}$ semiconductor system are solid solutions;capable of being prepared in many S:Se ratios. CdS, CdSe and mixed single crystals were prepared, employing the methcd described by N. I. Vitrichovskii and I. B. Mizebkaya; Fizika Tverdogo Tela, 1, 397 (1959), and examined as to their photovoltaic effect. The crystals were fastened to glass and placed between two electrodes (Al and/or Au; 0.8 to 1.0 millimeter apart) and vapor-treated. The gold electrode was rectifying and the aluminum electrode made ohmic contact as was expected. The photoelements thus prepared were illuminated perpendicular

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L 18844-63
ACCESSION NR: AP3005932

to the crystal plane and electrode surface. Elements with two identical electrodes (Al or Au) showed no photo-electromotive force; those containing one Al and one Au electrode did (200-4000 millivolt, the value depending on several factors), regardless of semi-conductor composition. The spectral dependence of the photovoltaic effect is shown in Figure 1, Enclosure 1. The relation between the long wavelength limit for the photovoltaic effect and semiconductor composition is shown in Figure 2, Enclosure 2. When used as photoresistor, the spectral distribution was of the usual type. Orig. art. has 3 figures.

ASSOCIATION: Institute for Physics at the Bulgarian Academy of Sciences, Sofia
[Abstracter's note: original-language version not given]

SUBMITTED: 29Jun63 DATE ACQ: 26Aug63 ENCL: 02

SUB CODE: MA, PH NO REF SOV: 002 OTHER: 000

Card 2/4

ANDREICHIN, R., d-r; KEKHLIBAROV, T.; MLADENOV, At.

A device for simultaneous recording of solar radiation intensity in various spectral regions. Izv fiz atom BAN 11 no.1/2:49-58 '63.

1. Chlen na Redaktsionnata kolegiia "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

ANDREICHIN R.

ACCESSION NR: AT4017774 B/2503/63/011/01-/0019/0029

AUTHOR: Andreychin, R.; Stanislavova, Yu.

TITLE: Photoelectromotive forces in evaporated CdS layers and mixed CdS-CdSe semiconductors

SOURCE: B"lgarska Akademiya na Naukite. Fizicheski institut. Izvestiya na Fizicheskiya institut s ANEB (News of the Institute of Physics and the Atomic Energy Scientific Research Foundation), v. 11, no. 1-2, 1963, 19-29

TOPIC TAGS: photovoltaic effect, photovoltaic, photoelectromotive force, semiconductor, CdS, CdSe, In, Cu, Al, Au, photoelement, barrier layer, contact potential

ABSTRACT: Observations, made of the photovoltaic effect in CdS_xSe_{1-x} evaporated layers (with all values of x from 1 to 0), supplement hitherto known instances of this phenomenon in CdS and CdSe. Layers were produced by evaporating in a vacuum substances of diverse origin, containing various quantities of activator impurities. Some layers were subjected to additional sensitization, and all to thermal treatment. Thermal treatment is not required to produce photoelectromotive force, but it heightens the mechanical strength of the layer. Applied to each layer -- likewise

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ACCESSION NR: AT4017774

by evaporation in a vacuum -- were electrode pairs (In-Cu or Al-Au), spaced about 1 mm from each other. Under these conditions, all layers -- not only pure CdS or CdSe, but also mixed CdS_xSe_{1-x} layers -- exhibit a photovoltaic effect of an intensity which depends on the nature of the electrodes and the composition of the semiconductor. For CdS, photoelectromotive force amounts to as much as 400 millivolts with In-Cu electrodes, and 300 mV with Al-Au electrodes, while current (limited by the high internal resistance of the layers -- of the order of 10^5--10^6 ohms) amounts to as much as 50 microamperes. As the S is gradually replaced with Se until pure CdSe is obtained, the intensity of the e.m.f. manifests a tendency gradually to decrease, while current, conversely, tends to increase (up to 200 mA in the case of CdSe). In all cases Cu or Au is the positive pole in the external circuit of the photoelement. Usually the intensity of e.m.f. is lower after the electrodes are placed on the layer, but increases in the course of time, attaining the values mentioned above. The authors compared these facts with the curve of values of photoelectromotive force appearing when various sites of the semiconductor layer were illuminated with a narrow beam of light (Fig. 1 of the Enclosure), and concluded that two effects occur here simultaneously, viz.: the photovoltaic effect of a barrier layer and a contact potential photovoltaic effect. In time the component of the former increases, probably by reason of the adsorption of gases as it shifts to the copper or gold electrode. The spectral distribution of

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ACCESSION NR: AT4017774

the effect depends on the composition of the layer and its impurities. Maximum sensitivity gradually shifts from about 500 nm for CdSe to more than 700 nm for CdSe. For semiconductor layers without an activator the curves are comparatively narrow (Fig. 3, for CdS), while with an increase in the quantity of activator impurities they become wider (Fig. 2 for CdS, Fig. 4 for $CdS_{0.15}Se_{0.85}$ and Fig. 5 for CdSe), with sensitivity continuing quite far toward the long wave end. When the same layers function as photoresistors, the spectral sensitivity curve is much narrower and is significantly displaced toward the end with shorter waves (Figs. 2 and 4 of the Enclosure). "The authors express their gratitude to Comrade M. Nikiforova for the production and chemical treatment of basic substances." Orig. art. has: 5 figures.

ASSOCIATION: none

SUBMITTED: 02Mar63 DATE ACQ: 04Mar64 ENCL: 04

SUB CODE: PH NO REF SOV: 004 OTHER: 010

Card 3/13

ACCESSION NR: AT4017775 B/2503/63/011/01-/0031/0037

AUTHOR: Andreychin, R.; Nikiforova, M.; Ivanov, A.; Stanislavova, Yu.

TITLE: Transversal photovoltaic effect in mixed CdS-CdSe crystals

SOURCE: B"lgarska Akademiya na Naukite. Fizicheski institut. Izvestiya na Fizicheskiya institut s ANEB (News of the Institute of Physics and the Atomic Energy Scientific Research Foundation), v. 11, no. 1-2, 1963, 31-37

TOPIC TAGS: CdS, CdSe, mixed crystal, crystal, photovoltaic effect

ABSTRACT: Mixed CdS_xSe_{1-x} single crystals with values of x from 0 to 1 were produced by evaporating a mixture of powdered CdS and CdSe and recrystallizing it by the method described by Vitrikhovskiy and Mizetskaya (FTT (Solid State Physics), 1, 397-402, 1952). These crystals represented a continuous series of solid solutions of replacement, with any given sulfur-selenium ratio falling within the limits of stoichiometric composition. The composition of the crystals was determined by means of preliminary calculation of the components and verified by direct chemical analysis of finished crystals. Crystals were glued to glass plates and a pair of metal electrodes applied to them by evaporation in a vacuum. These electrodes were parallel to each other and spaced about 1 mm from each other (Figure 1 of the Enclosure).

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ACCESSION NR: AT4017775

When electrodes of different metals (Al-Au or In-Cu) were applied to the crystals, under illumination there originated an electromotive force of the order of 200 to 400 millivolts, and a current with density from 100 to 200 microamperes per centimeter of semiconductor-electrode contact. (In this connection, only semi-conductor-gold or semi-conductor-copper electrode is active here; illumination of the other electrode of the free surface of the crystal between electrodes has no material significance.) The value of e.m.f. apparently is greatest in the case of CdS and diminishes with an increase in the content of selenium in mixed semiconductors. The spectral distribution of this photovoltaic effect is quite characteristic. Its curve in the case of wave lengths shorter than 400-450 nm has not been completely explained, but from this point to the adsorption face of the crystal (scaled per unit of incident light energy) remains the same for any wave length (Figure 2 of the Enclosure). Long-wave sensitivity limit, corresponding to the adsorption face, varies smoothly with the composition of crystals from 500 nm in the case of CdS to 740 nm in the case of CdSe (Figure 3 of the Enclosure). If we apply an external field and test these photoelements as photoresistances, the spectral distribution for these same crystals is typical of photoconductivity, even when different electrodes are used (Fig. 4 of the Enclosure). The authors believe that the effect is purely superficial rather than deepseated, and further investigation is in progress to elucidate not only the properties, but also the character of the effect. Orig.

Card 2/6

ACCESSION NR: AT4017775

art. has 4 figures.

ASSOCIATION: none

SUBMITTED: 02Mar63 DATE ACQ: 04Mar64 ENCL: 03

SUB CODE: PH, GE NO REF SOV: 001 OTHER: 018

Card 3/4

ANDREICHIN, R., d-r; STANISLAVOVA, IU.

Photoelectromotive forces in evaporated cadmium sulfide layers and mixed cadmium sulfide and cadmium selenide semiconductors. Izv fiz atom BAN 11 no.1/2:19-29 '63.

1. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

ANDREICHIN, R., d-r; NIKIFOROVA, M.; IVANOV, A.; STANISLAVOVA, IU.

Transversal photovoltaic effect in mixed cadmium sulfide and cadmium selenide crystals. Izv fiz atom BAN 11 no.1/2:31-37 '63.

1. Chlen na Redaktsionnata kolegiia, "Izvestiia na Fizicheskiia institut s ANEB" (for Andreichin).

ANDREICHIN, Razum, prof. d-r

Fluorescent or luminescent lamps. Elektroenergiia 15 no.4:31 Ap '64.

1. Institute of Physics and Atomic Research Laboratory, Bulgarian Academy of Sciences.

L 11121-66 EWT(1) IJP(c) AT

ACC NR: AP6001077 SOURCE CODE: BU/0011/65/018/010/0903/0905

AUTHOR: Kandilarov, B.; Stanislavova, Y.; Andreichin, R.

ORG: Institute of Physics, Bulgarian Academy of Science

TITLE: Spectral sensitivity of CdS-CdSe heterojunction photovoltaic effect and some problems of quasiepitaxy

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 10, 1965, 903-905

TOPIC TAGS: pn junction, photoelectric cell, photoelectric effect, cadmium sulfide, cadmium selenide

ABSTRACT: Changes in the spectral dependence of the heterojunction photovoltaic effect arising because of the structural differences of the two contacting substances were investigated in CdS—CdSe photoelements. Tests of variously treated glass substrates showed that the largest photovoltages are obtained when the semiconductors are deposited on a smooth glass plate and when this substrate is heated during the deposition of the bottom electrode. In some cases good photoelements were also obtained on finely matted and preheated glass plates. It is suggested that in the process of heating, structural changes occur in the CdS layer and in the intergrowth between the two surfaces, without affecting the long-wave sensitivity of the CdSe upper layer. Orig. art. has: 4 figures. [ZL]

SUB CODE: 10/ SUBM DATE: none/ OTH REF: 002/ ATD PRESS: 4176

Card 1/1 HW

L 34516-66 EWT(1) IJP(c) AT

ACC NR: AP6024740 SOURCE CODE: BU/0011/65/018/010/0903/0905

AUTHOR: Kandilarov, B.; Stanislavova, Y.; Andreichin, R.

ORG: Institute of Physics, BAN

TITLE: Spectral sensitivity of CdS-CdSe heterojunction photovoltaic effect and some problems of quasiepitaxy

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 10, 1965, 903-905

TOPIC TAGS: photovoltaic effect, spectrum analysis, cadmium compound

ABSTRACT: The authors reported in an earlier paper (Phys. Stat. Sol., 8, 1965, 897) the observations of the photovoltaic effect of the CdS-CdSe heterojunction. The present paper describes changes in the spectral dependence of this photovoltaic effect caused by the differences in structure of the two substances in contact. Results show that whenever a process of major importance (like the photovoltaic effect) occurs in the heterojunction region, the spectral distributions of the photoeffect for epitaxial and quasiepitaxial heterojunction appear the more similar the more completely the region of structural matching encompasses the region of heterojunction, i.e., the closer its structure comes to an ordinary epitaxial junction. This paper was presented by Academician G. Nadjakov on 5 July 1965. Orig. art. has: 6 figures. [Orig. art. in Eng.] [JPRS: 34,780]

SUB CODE: 20 / SUBM DATE: none / OTH REF: 005

Card 1/1

ANDREICOVICI, Gh., ing.

Methods of analyzing and identifying polynitrilacrylic and polyesteric fibers. Ind text Rum 13 no.1:40-43 Ja '62

1. Institutul de cercetari textile.

AVACHIAN, A., ing.; ANDREICOVICI, G., ing.

Stability of the white color and its determination on cotton fabrics. Ind text Rum 13 no.12:509-511 D '62.

1. Institutul de cercetari textile.

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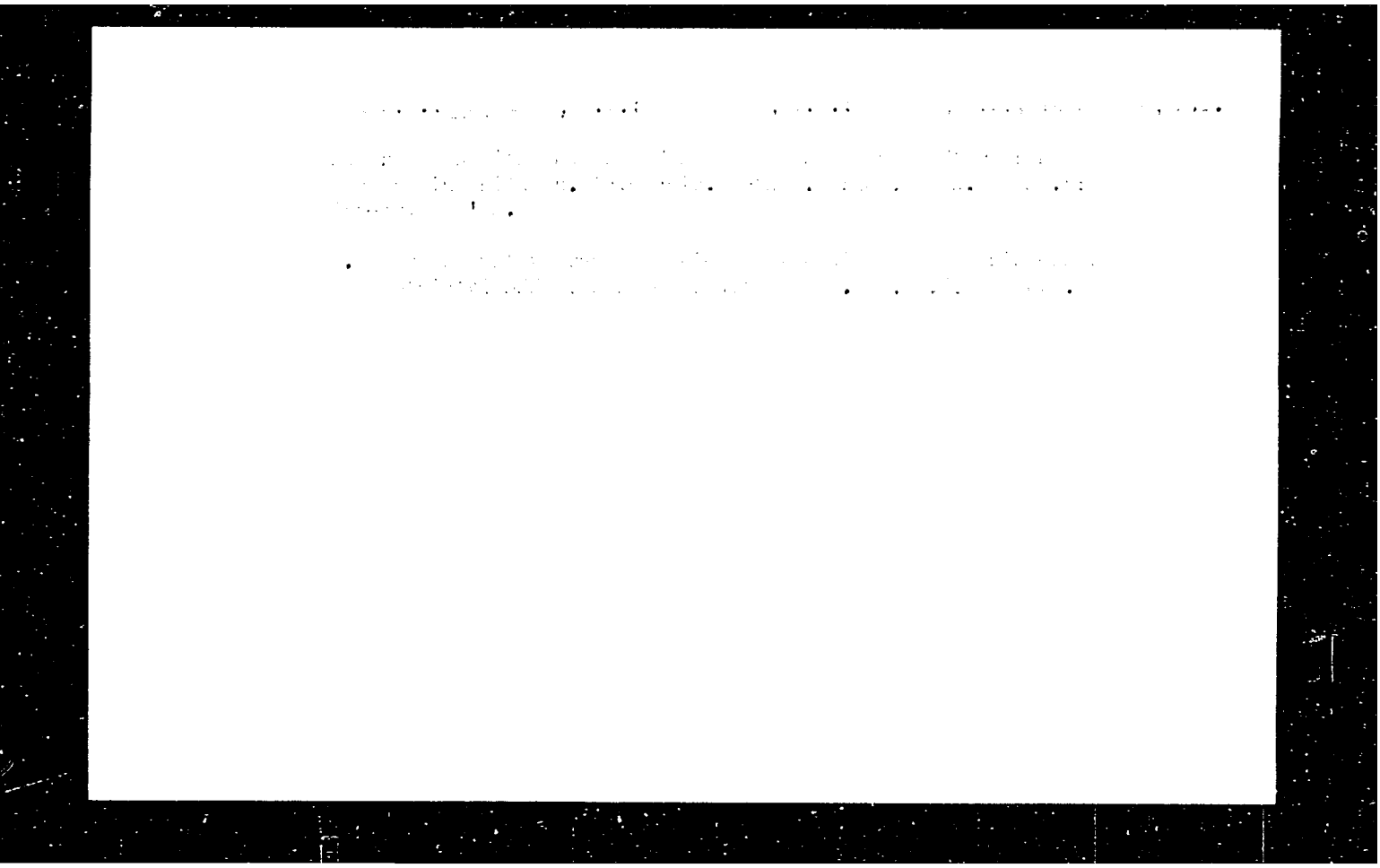

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